Cal/Ecotox
Exposure Factors for Gopher Snake (Pituophis melanoleucus)*

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Age at Sexual Maturity	3			yr	M	Adult	ID	a	1
Body Weight - Mean	267.9	123.0 SD		g	F	Adult	ID	b	1
Body Weight - Mean	238.4	101.5 SD		g	M	Adult	ID	c	1
Body Weight - Mean	655		513 - 950	g	NR	Adult	Lab	d	2
Body Weight - Mean	548		396 - 961	g	NR	Adult	Lab	e	3
Body Weight - Mean	33.5	6 SE		g	B	Juvenile	Lab	f	4
Body Weight - Mean	59.8	43.0 SD		g	F	Juvenile	ID	g	1
Body Weight - Mean	45.0	38.9 SD		g	M	Juvenile	ID	h	1
Body Weight - Mean	11.5	0.3 SD		g	B	Neonate	ID	i	1
Clutch or Litter Size	8.5		3 - 19	eggs/clutch	F	Adult	CA	j	5
Clutch or Litter Size	8.8			eggs/clutch	F	Adult	Lab	k	4
Clutch or Litter Size	6.9	2.10 SD	3 - 11	eggs/clutch	F	Adult	ID	l	1
Dietary Composition	Cottontail (37.1%); Ground squirrel (27.9%); Woodrat (18.6%); Bird egg (5.3%); Gopher (4.0%); Other (7.1%)			%	NR	NR	CA	m	6
Dietary Composition	Townsend ground squirrel (8.7%); Mountain conttontail (7.8%); Deer mouse (47.5%); Ord kangaroo rat (4.9%); Great Basin pocket mouse (5.8%); Montane vole (9.7%); House mouse (7.8%); Other species (7.8%)			%	NR	NR	ID	n	7
Dietary Composition	Townsend ground squirrel (27.7%); Mountain conttontail (31.6%); Deer mouse (19.0%); Ord kangaroo rat (5.4%); Great Basin pocket mouse (1.8%); Montane vole (6.1%); House mouse (2.8%); Other species (5.5%)			%	NR	NR	ID	o	7
Dietary Composition	Ground squirrel (44.3%); Woodrat (29.5%); Cottontail (19.7%); Quail egg (8.4%); Pocket gopher (6.4%); Mouse (4.4%); Meadow mouse (3.4%); Fence lizard (1.5%); Kangaroo rat (1.3%); Pocket mouse (0.6%); Broad-shouldered lizard (0.4%)			%	NR	NR	CA	p	8
Dietary Composition	Townsend ground squirrel (30.3%); Mountain conttontail (34.4%); Deer mouse (15.8%); Ord kangaroo rat (5.9%); Great Basin pocket mouse (1.7%); Montane vole (5.6%); House mouse (2.2%); Other species (4.1%)			%	NR	NR	ID	q	1
Dietary Composition	Townsend ground squirrel (10.6%); Mountain conttontail (11.6%); Deer mouse (43.3%); Ord kangaroo rat (5.8%); Great Basin pocket mouse (5.8%); Montane vole (9.6%); House mouse (6.7%); Other species (6.7%)			%	NR	NR	ID	r	1

Exposure Factors for Gopher Snake (Pituophis melanoleucus)

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Dietary Composition	review				NR	NR		s	9
Duration of Incubation or Gestation	125			d	F	Adult	ID	t	1
Food Ingestion Rate	2			g/d	NR	NR	CA	u	6
Food Ingestion Rate	1.6	0.82 SD		%	NR	NR	Lab	v	7
Home Range	460		0 - 1000	ft	B	Adult	CA	w	8
Inhalation Rate	363 (15C); 508 (20C); 709 (25C); 999 (30C)			ml/kg/hr	NR	Adult	Lab	x	2
Metabolic Rate	5.6 (15C); 9.8 (20C); 17.3 (25C); 30.4 (30C)			ml O2/kg/hr	NR	Adult	Lab	y	2
Metabolic Rate	log VO2 = 0.013 + 0.049T			ul O2/g/hr	NR	Adult	Lab	z	2
Metabolic Rate	OC = 0.0101T + 0.162			ml O2/g/hr	NR	Adult	Lab	aa	3
Metabolic Rate	OC = 0.324/(37.4 - T)			ml O2/g/hr	NR	Adult	Lab	ab	3
Metabolic Rate	OC = 0.198T - 0.126			ml O2/g/hr	NR	Adult	Lab	ac	3
Population Density	1.2	0.6 SD	0.1 - 1.9	#/ha	B	NR	ID	ad	7
Population Density	0.6			#/acre	NR	NR	CA	ae	6
Population Density			3 - 11.6	#/km	NR	NR	Alameda; San Joaquin; CA	af	10
Time of Hatching or Parturition	Oct.				NR	Hatchling	ID	ag	1
Time of Mating/ Laying	June - July				F	Adult	ID	ah	1
Time of Torpor or Hibernation	Oct. - Apr.				NR	NR	ID	ai	1

Notes

a N=NR; Snake River Birds of Prey Area, southwestern ID
b N=90; Snake River Birds of Prey Area, southwestern ID; average snout-vent length = 96.7 cm
c N=231; Snake River Birds of Prey Area, southwestern ID; average snout-vent length = 96.0 cm
d N=11; captured at Riverside, CA
e N=14
f N=68; Age=15 d; see citation for effects of incubation temperature on hatching success and frequency of abnormalities
g N=59; Snake River Birds of Prey Area, southwestern ID; average snout-vent length = 58.5 cm
h N=44; Snake River Birds of Prey Area, southwestern ID; average snout-vent length = 51.1 cm
i N=9; Snake River Birds of Prey Area, southwestern ID; average snout-vent length = 29.5 cm
j N=33; "west coast"
k N=38
l N=20; Snake River Birds of Prey Area, southwestern ID
m percentage of total prey weight palped from stomachs; N=70 prey items; San Joaquin Experimental Range
n % frequency of prey ingested based on stomach content and scat analysis; N=103 items/405 captures; Snake River Birds of Prey Area, southwestern ID
o % biomass of prey ingested based on stomach content and scat analysis; N=103 items/405 captures; Snake River Birds of Prey Area, southwestern ID
p % of total food items recovered from stomach contents; N=72 food items; Mar. - Oct.; San Joaquin Experimental Range
q % biomass of prey based on stomach contents and scat analysis; N=104 prey items/455 snakes; Snake River Birds of Prey Area, southwestern ID
r % frequency of prey based on stomach contents and scats; N=104 prey items/455 snakes; Snake River Birds of Prey Area, southwestern ID
s N=NR
t N=NR; Snake River Birds of Prey Area, southwestern ID
u N=NR; San Joaquin Experimental Range
v % body weight consumed per day; N=43; Age=Age class 1 and older; captive in outdoor enclosures at Snake River Birds of Prey Area; see citation for estimates of annual prey ingestion rate at mean density
w median distance traveled between recaptures; N=25; San Joaquin Experimental Range
x ventilation volume [ml (BTPS)/kg/hr) measured at 15-30 C; N=7; Condition=resting; captured at Riverside, CA; tidal volume (ml/kg) ranged from 28.1 to 35.9 and breathing frequency (breaths/hr) ranged from 11-40.
y oxygen consumption rates measured at body temperatures of 15-30C; N=4/temp; Condition=resting; captured at Riverside, CA

z	equation for oxygen consumption (logarithm of VO2; ul O2/g-h) as a function of body temperature (15-30C); N=11; Condition=resting; captured at Riverside, CA; see citation for figure
aa	active oxygen consumption (OC) as a function of body temperature (T; 29-35C); N=14; average body weight = 548 g
ab	resting oxygen consumption (OC) as a function of body temperature (T; 10-35C); N=14; average body weight = 548 g
ac	active oxygen consumption (OC) as a function of body temperature (T; 10-29C); N=14; average body weight = 548 g
ad	mean density in 9 habitat types; N=NR; May - July; Snake Rive Birds of Prey Area, southwestern ID; see citation for biomass (g/ha) estimates
ae	N=NR; San Joaquin Experimental Range
af	range of abundance along a transect crossing 3 habitat types; N=NR; Apr. - June; Corral Hollow Road (elev. 91 - 488 m)
ag	N=NR; Snake River Birds of Prey Area, southwestern ID
ah	time of laying; N=NR; Snake River Birds of Prey Area, southwestern ID
ai	N=455; Snake River Birds of Prey Area, southwestern ID

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